REMARKS

This is a full and timely response to the Office Action mailed June 15, 2005. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

Present Status of Patent Application

Upon entry of the amendments in this response, claims 1-8 and 11-28 remain pending in the present application. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

A. Claim Rejections - 35 U.S.C. § 102

General statement of the rejection

Claims 1, 5-6, 8, 11-12, 14-17, 20-22, 25 and 28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Killat (US Patent No. 4,442,550).

Response to the Rejection

Claim 1

As pointed out by Applicants in an earlier response, Killat discloses "a device for recognizing a binary word," whereas Applicants' claim 1 relates to a method for performing time-delay equalization. Consequently, Applicants respectfully assert that **Killat does not disclose any method steps** as alleged in the Office Action rejection. It is unfortunate that in rejecting Applicants' claim 1, certain erroneous assumptions have been made without basis in the cited prior art. Specifically, the Office action states that "*by performing the steps above as taught by Killat, time domain equalization is achieved and the method is capable of correcting the impulse response impairment of the received light pulse.*" (Emphasis added). Applicants respectfully submit that Applicants' method steps of claim 1 are not taught by Killat, nor is the Office action statement that "the method is capable..." provide a reasonable basis for rejecting Applicants' method claim 1, especially when Killat's invention is not even related to time domain equalization as admitted elsewhere in the Office action (page 14, second paragraph, which states: "However, although Killat does not explicitly disclose that the method is for carrying out time domain equalization...")

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. Accordingly, the single prior art reference must properly disclose, teach or suggest *each element* of the claimed invention. Furthermore, it

may be relevant to point out that 35 U.S.C. 101 states: "Whoever invents or discovers any new and useful **process**, machine, manufacture, or composition of matter, or **any new and useful improvement thereof**, may obtain a patent therefor, subject to the conditions and requirements of this title."

Applicants' claim 1 provides a new process for time-domain equalization of optical signals, which has not been disclosed in the cited prior art.

Consequently, Applicants respectfully assert that the rejection of claim 1 under 35 U.S.C. 102(b) is improper, and request withdrawal of the rejection followed by allowance of claim 1.

Claims 5-6, 11-12, 15-17, and 28

Claims 5-6, 11-12, 15-17, and 28 depend directly or indirectly on independent claim 1. Since independent claim 1 is allowable over the prior references of record, then dependent claims 5-6, 11-12, 15-17, and 28 are also allowable as a matter of law. *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

Consequently, Applicants traverse the rejection of claims 5-6, 11-12, 15-17, and 28 and request allowance of these claims.

Claim 8

Claim 8 includes, in pertinent part, "providing a first delay that is operative in part, to provide optical equalization of the light pulse." The Office action states in page 3: "Killat teaches the method of claim 1, wherein: optically delaying at least one of the plurality of beams comprises providing a first delay that is operative in part, to provide optical equalization of the light pulse..." Such a statement appears contradictory to another Office action statement on page 14, second paragraph, which states: "However, although Killat does not explicitly disclose that the method is for carrying out time domain equalization..."

Consequently, Applicants respectfully assert that the cited prior art, Killat, does not disclose or teach at least this aspect of claim 8, and therefore request withdrawal of the rejection of claim 8 under 35 U.S.C. 102(b).

Applicants further respectfully request allowance of claim 8.

Claim 14

Claim 14 includes, in pertinent part, "optically dividing each of the beams into a first sub-beam and a second sub-beam having an intensity ratio." Killat does not at least disclose this aspect of Applicants' claim 14. Therefore, Applicants respectfully assert that the

rejection of claim 14 under 35 U.S.C. 102(b) is improper and request withdrawal of the rejection followed by allowance of claim 14.

Claim 20

Claim 20 is reproduced below with certain pertinent aspects emphasized to draw attention to the fact that at least these aspects are not disclosed or taught in the cited prior art.

> 20. A system for performing time-domain equalization, the system comprising:
> means for receiving an optical signal comprising a light pulse having an impulse response impairment;
> means for optically splitting the optical signal into a plurality of beams;
> means for optically delaying at least one of the plurality of beams;
> means for detecting the plurality of beams to generate respective electrical signal components; and
> **means for combining the respective electrical signal components to generate an electrical output signal representing the light pulse after correction of the impulse response impairment.**
> (Emphasis added)

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. Accordingly, the single prior art reference must properly disclose, teach or suggest *each element* of the claimed invention.

Applicants respectfully assert that the cited prior art, Killat, does not pertain to time domain equalization and does not disclose or teach at least the emphasized aspect of claim 20 above. Consequently, Applicants respectfully request withdrawal of the rejection of claim 20 under 35 U.S.C. 102(b), followed by allowance of claim 20.

Claims 21-22

Response to the rejection

Claims 21-22 depend directly or indirectly on independent claim 20. Since independent claim 20 is allowable over the prior references of record, then dependent claims 21-22 are also allowable as a matter of law. *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988)

Consequently, Applicants traverse the rejection of claims 21-22 and request allowance of these claims.

Claim 25

Claim 25 is reproduced below with certain pertinent aspects emphasized to draw attention to the fact that at least these aspects are not disclosed or taught in the cited prior art.

> 25. A system for performing time-domain equalization, the system comprising:
> a beamsplitter adapted to split an optical signal comprising a light pulse having an impulse response impairment, optically into beams;

a delay component optically communicating with the beamsplitter, the delay component being configured to receive at least one of the beams and delay the at least one of the beams optically;

an array of photodetectors arranged to receive the beams comprising the at least one of the beams, the array of photodetectors being adapted to generate respective electrical signal components; and

an amplifier arranged to receive the electrical signal components, the amplifier being adapted to generate **an electrical output signal representing the light pulse after correction of the impulse response impairment**.
(Emphasis added)

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. Accordingly, the single prior art reference must properly disclose, teach or suggest *each element* of the claimed invention. Applicants respectfully assert that the cited prior art, Killat, does not pertain to time domain equalization and does not disclose or teach at least the emphasized aspect of claim 25 above. Consequently, Applicants respectfully request withdrawal of the rejection of claim 25 under 35 U.S.C. 102(b), followed by allowance of claim 25.

B. Claim Rejections - 35 U.S.C. § 102

General statement of the rejection

Claims 1, 2-4, 8, 11, 14, 18, 20, and 23-24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lewis (US Patent No. 5,555,119).

Response to the Rejection

Claim 1

Lewis discloses a process "for digital sampling of individual pulses." On the other hand, Applicants' claim 1 pertains to a method "for performing time-domain equalization." Claim 1 is reproduced below with certain pertinent aspects emphasized to draw attention to the fact that at least these aspects are not disclosed or taught in the cited prior art.

1. A method for performing time-domain equalization, the method comprising:

receiving an optical signal comprising a light pulse having an impulse response impairment;

optically splitting the optical signal into a plurality of beams;

optically delaying at least one of the plurality of beams;

detecting the plurality of beams to generate respective electrical signal components; and

combining the respective electrical signal components to generate an **electrical output signal representing the light pulse after correction of the impulse response impairment**.
(Emphasis added)

Applicants respectfully assert that the cited prior art does not disclose or teach at least the emphasized aspects of claim 1 above. In this regard, attention is drawn to Lewis' Fig. 2a and Fig. 2b, which are described in Lewis' column 9, lines 1-8 as follows:

> In operation when an individual pulse of the form shown in FIG. 2a is received by the aerial 6 the combined output that is input into the digital oscilloscope 23 is of the form shown in Fig. 2b. The pulse shown in FIG. 2a is schematic because the pulse would arrive at the aerial 6 through air and so would not be a direct current pulse, it would have no direct current component. **The output** in FIG. 2b **comprises** 5 repeated **signals having substantially the same profile as the original solitary pulse** and the time delay between successive signals is t, the incremental delay. (Emphasis added)

Clearly, as emphasized above, Lewis' disclosure is not directed at time delay equalization, a fact that is further confirmed by the Office action on page 14, paragraph 3, which states: "However, although Lewis does not explicitly disclose that the method is for carrying out time-domain equalization..." Applicants' claim 1 includes "combining the respective electrical signal components to generate an **electrical output signal representing the light pulse after correction of the impulse response impairment**."

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. Accordingly, the single prior art reference must properly disclose, teach or suggest *each element* of the claimed invention. Applicants respectfully assert that the cited prior art, Lewis, does not pertain to time domain equalization and does not disclose or teach at least the emphasized aspect of claim 1 above.

Consequently, Applicants respectfully request withdrawal of the rejection of claim 1 under 35 U.S.C. 102(b), followed by allowance of claim 1.

Claims 2-4, 8, 11, 14, and 18

Claims 2-4, 8, 11, 14, and 18 depend directly or indirectly on independent claim 1. Since independent claim 1 is allowable over the prior references of record, then dependent claims 2-4, 8, 11, 14, and 18 are also allowable as a matter of law. *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

Consequently, Applicants traverse the rejection of claims 2-4, 8, 11, 14, and 18 and request allowance of these claims.

Claim 20

Claim 20 is reproduced below with certain pertinent aspects emphasized to draw attention to the fact that at least these aspects are not disclosed or taught in the cited prior art.

20. A system for performing time-domain equalization, the system comprising:
means for receiving an optical signal comprising a light pulse having an impulse response impairment;
means for optically splitting the optical signal into a plurality of beams;
means for optically delaying at least one of the plurality of beams;
means for detecting the plurality of beams to generate respective electrical signal components; and
means for combining the respective electrical signal components to generate an electrical output signal representing the light pulse after correction of the impulse response impairment.
(Emphasis added)

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. Accordingly, the single prior art reference must properly disclose, teach or suggest *each element* of the claimed invention.

It is unfortunate that in rejecting Applicants' claim 20, certain erroneous assumptions have been made without basis in the cited prior art. For example, the Office action states that Lewis discloses "means for combining the respective electrical signal components to generate an electrical output signal (fig. 1, 28) representing the light pulse after correction of the impulse response impairment..." As mentioned above, Lewis discloses that: "The **output** in FIG. 2b **comprises** 5 repeated **signals having substantially the same profile as the original solitary pulse**." Such an output does not include "correction of the impulse response impairment" as asserted in the Office action.

Applicants respectfully assert that the cited prior art, Lewis, does not pertain to time domain equalization and does not disclose or teach at least the emphasized aspect of claim 20 above. Consequently, Applicants respectfully request withdrawal of the rejection of claim 20 under 35 U.S.C. 102(b), followed by allowance of claim 20.

Claims 23-24

Response to the rejection

Claims 23-24 depend directly or indirectly on independent claim 20. Since independent claim 20 is allowable over the prior references of record, then dependent claims 23-24 are also allowable as a matter of law. *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

Consequently, Applicants traverse the rejection of claims 23-24 and request allowance of these claims.

C. Claim Rejections - 35 U.S.C. § 102

General statement of the rejection

Claims 1, 2, 5, 8, 10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Wickham *et al.* (U.S. Patent No. 6,708,003).

Response to the Rejection

Claim 1

Applicants respectfully re-iterate the arguments made in an earlier response and respectfully request withdrawal of the rejection, followed by allowance of claim 1.

Claims 2, 5, 8, and 13

Claims 2, 5, 8, and 13 depend directly or indirectly on independent claim 1. Since independent claim 1 is allowable over the prior references of record, then dependent claims 2, 5, 8, and 13 are also allowable as a matter of law. *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

Consequently, Applicants traverse the rejection of claims 2, 5, 8, and 13 and request allowance of these claims.

D. Claim Rejections - 35 U.S.C. § 103

Claim 7

Statement of the rejection

Claim 7 has been rejected under 35 U.S.C 103(a) as being unpatentable over Lewis in view of Killat.

Response to the rejection

In rejecting claim 7, the Office action states: "However, both Lewis and Killat teach a method of receiving an optical signal ..., and combining the respective electrical signals after correction of the impulse response impairment." Applicants respectfully assert that this is an improper assertion, based on impermissible hindsight, because Lewis and Killat individually and in combination do not disclose "correction of impulse response impairment." The process involved in correction of impulse response impairment as described in dependent claim 7, is patentably distinct from the teachings of Lewis and Killat. As asserted in the earlier response, Applicants once again respectfully assert that the rejection of claim 7 is improper because it does not conform to MPEP guidelines for a rejection under 35 U.S.C. 103(a). Specifically, Applicants respectfully draw attention to an earlier response where arguments were made relating to a lack of suggestion or motivation to combine or modify the cited references in the manner put forth in the Office action. It was also pointed out in the

earlier response that the cited references, individually or in combination, fail to disclose all the elements of Applicants' claim 7.

Consequently, Applicants respectfully request withdrawal of the rejection, followed by allowance of claim 7.

E. Claim Rejections - 35 U.S.C. § 103

Claims 25 -27

Statement of the rejection

Claims 25-27 have been rejected under 35 U.S.C 103(a) as being unpatentable over Lewis.

Claim 25

Response to the rejection

Applicants respectfully draw attention to an earlier response where arguments were made relating to a lack of suggestion or motivation to combine or modify the cited references in the manner put forth in the Office action. It was also pointed out in the earlier response that the cited references, individually or in combination, fail to disclose all the elements of Applicants' claim 25. Applicants respectfully re-iterate the arguments made in the earlier response and respectfully request withdrawal of the rejection, followed by allowance of claim 25.

Claims 26-27

Response to the rejection

Claims 26-27 depend directly on independent claim 25. Since independent claim 25 is allowable over the prior references of record, then dependent claims 26-27 are also allowable as a matter of law. *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988)

Consequently, Applicants traverse the rejection of claims 26-27 and request allowance of these claims.

F. Claim Rejections - 35 U.S.C. § 103

Claim 19

Statement of the rejection

Claim 19 has been rejected under 35 U.S.C 103(a) as being unpatentable over Killat in view of Ogura.

Response to the rejection

Applicants respectfully draw attention to an earlier response where arguments were made relating to a lack of suggestion or motivation to combine or modify the cited references in the manner put forth in the Office action. It was also pointed out in the earlier response that the cited references, individually or in combination, fail to disclose all the elements of Applicants' claim 25. Applicants respectfully re-iterate the arguments made in the earlier response and respectfully request withdrawal of the rejection, followed by allowance of claim 19.

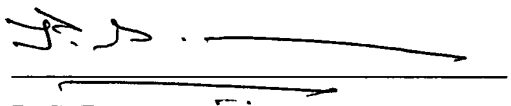
Prior Art Made of Record

The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

CONCLUSION

In light of the reasons set forth above, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that claims 1-8 and 11-28 are in condition for allowance. Although some dependent claim rejections and some obviousness rejections are explicitly addressed above, the omission of arguments for other claims is not intended to be construed as an implied admission that the Applicant agrees with the rejection or finding of obviousness for the respective claim or claims. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned representative at (404) 610-5689.

Respectfully submitted,



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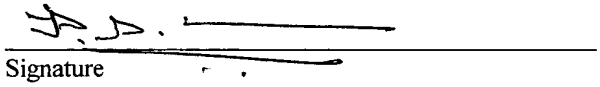

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